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By

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Attorney Docket No. NECU 20.463 (100806-00211)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor: Atsushi MUKOYAMA  
Serial No.: 10/607,090  
Filed: June 25, 2003  
Title: ANTENNA UNIT AND RADIO....  
Examiner:  
Art Unit: 2821  
Con. No.: 5422

December 30, 2003

Director of the U.S. Patent and  
Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

S I R:

In order to comply with discretionary rules 37 CFR §§1.97 and 1.98, attached hereto is a copy of Form PTO-1449 and a copy of the document listed thereon. This document contains information in which the Examiner may consider to be important in deciding whether to issue a patent in the instant application.

As this statement is being filed prior to issuance of a first Office Action, no fee is due.

Also attached is a copy of an International Search Report dated October 20, 2003 from the corresponding International Patent Application. All of the documents listed in Form PTO-1449 appear in the International Search Report.



As some of these documents are written in a language other than English, English Language abstracts are annexed thereto explaining their relevancy in accordance with 37 CFR §1.98(a)(3).

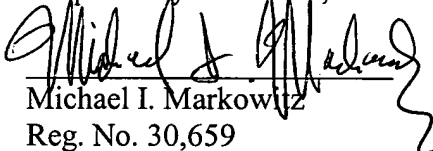
Each item of information contained in the information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

The present Information Disclosure Statement is being submitted in compliance with 37 §CFR 1.56 as an Examiner might consider any cited document important in deciding whether to allow the application to issue as a patent, but the citation of each document is not to be construed as an admission that such document is necessarily relevant or prior art. No representation is intended that the cited documents represent the results of a complete search, and it is anticipated that the Examiner in the normal course of examination, will make an independent search and will determine the best prior art consistent with 37 CFR 1.104 (a), and in the course of such search will review for relevance every document cited on the attached form even if not initialed.

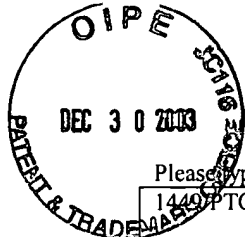
Early and favorable consideration is respectfully solicited.

**Any fee due with this paper may be charged on Deposit Account 50-1290.**

Respectfully submitted,

  
Michael I. Markowitz  
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Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

1449 PTO

U.S. Department of Commerce  
Patent and Trademark Office

Application No. : 10/607,090

Filing Date : June 25, 2003

First Named Inventor: A. MUKOYAMA

Group Art Unit : 2821

Examiner Name :

Attorney Docket No. : NECU 20.463

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

Sheet 1 of 1

**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No. <sup>1</sup>	U.S. Patent Document	Kind Code if known <sup>2</sup>	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns Lines Where Relevant Passages or Relevant Figures Appear
		4,717,921		OHE, et al.	01/05/1988	
		4,679,052		OHE, et al.	07/07/1987	

**FOREIGN DOCUMENTS**

Examiner Initials	Cite No. <sup>1</sup>	Foreign Patent Document Office <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Country	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YY/Y	Pages, Columns Lines Where Relevant Passages or Relevant Figures Appear
		0 102 091 ✓	EP	SCHLUMBERGER LTD.	03/07/1984	
		9-36629 ✓	JP	SONY CORP	02/07/1997	
		0 747 989 ✓	EP	LK-PRODUCTS OY	12/11/1996	
		1 193 794 ✓	EP	HARADA INDUSTRY CO., LTD.	02/26/2003	
		2 385 992 ✓	GB	NEC CORPORATION	09/03/2003	

**Other Prior Art-Non Patent Literature Documents**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), data, page(s), volume-issue number(s), publisher, country, where published, source.	Applicant check here if English language translation attached
		AW RUDGE, "THE HANDBOOK OF ANTENNA DESIGN" 1983: IEEE, pp. 842-844, VOL. 2, SECTION 17.6.2	
Examiner Signature		Date Considered	

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw a line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.1\* if possible. \* Applicant is to place a check mark here if English language Translation is attached.

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